

EXHIBIT 2

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE COMMISSION,

Plaintiff,

v.

No. 1:23-cv-1346

TERRAFORM LABS PTE LTD. And
DO HYEONG KWON,

Defendants.

**SUPPLEMENTAL EXPERT REPORT OF
DR. MATTHEW J. EDMAN**

I. INTRODUCTION

1. I, Dr. Matthew J. Edman, have been retained on behalf of the Plaintiff as an independent expert in the above-captioned matter. I previously submitted an expert report in connection with this matter on September 7, 2023, setting forth my expert opinions based on my review and analysis of the materials cited in my report, as well as my education, training, and experience. I subsequently submitted an updated version of my report (“Expert Report”) which corrected a formatting error in paragraph 65 and a typographical error in footnote 26. The analysis and opinions in my updated report, as well as the basis for those opinions, were unchanged.

2. On October 13, 2023, I submitted a rebuttal report (“Rebuttal Report”) responding to an expert report and deposition testimony by Mr. Raj Unny, who was retained on behalf of the Defendants to “[r]eview and assess the opinions and analyses” offered in my Expert Report, “including, specifically, [my] opinion that Terra blockchain transactions did not represent ‘real world’ processing of Chai transactions and were instead ‘transactions generated by the LP Server.’” (Unny Report ¶ 10(a).) As I stated in my Rebuttal Report, nothing in Mr. Unny’s report or deposition testimony caused me to revise the opinions I stated in my Expert Report and during my deposition testimony.¹ (Rebuttal Report ¶ 3.)

3. One of the opinions offered in my Expert Report is that a software developer named Paul Kim “was the primary developer or maintainer of the LP Server” based on my review of changes (or “commits”) made to the LP Server source code repository. (Expert Report ¶ 36.) I understand that on January 15, 2024, Paul Kim testified in Seoul Eastern District Court in South Korea subject to a request issued by this Court.

¹ I understand that Mr. Unny’s opinions and testimony have since been excluded for several reasons, including for being “speculative and wholly unsupported by evidence.” (ECF No. 149 at 31.)

4. I have reviewed and considered the translation of the transcript of Mr. Kim's testimony (Ex. 1, Kim Transcript), as well as the exhibits referenced in his testimony. Nothing in Mr. Kim's testimony or the exhibits referenced therein causes me to revise the opinions I have previously offered in this matter for the reasons described in this supplemental report.

II. PAUL KIM'S TESTIMONY SUPPORTS MY OPINION THAT HE WAS THE PRIMARY DEVELOPER OF THE LP SERVER

5. In my Expert Report, I analyzed the history of changes (or "commits") made to the LP Server source code repository. (Expert Report ¶¶ 34-35.) I determined that "there were a total of 45 commits to the repository, of which the user 'Paul Kim <paul@terra.money>' created 41 commits, 'Hanju Kim <paul@terra.money>' created three, and 'Yun <yun@terra.money>' created one." (Expert Report ¶ 35.) I also opined that "Paul Kim" and "Hanju Kim" referred to the same GitHub user. (Expert Report at 14 n.11.) Based on this analysis, I concluded that Paul Kim was the primary developer or maintainer of the LP Server. (Expert Report ¶ 36.)

6. In his testimony in South Korea, Mr. Kim confirmed that his name is Hanju Kim and his "English nickname is Paul Kim." (Kim Tr. at 2.) Mr. Kim's testimony further supports the opinion in my Expert Report that he "was the primary developer or maintainer of the LP Server." (Expert Report ¶ 36.)

Q. In fact, you created the LP server, correct?

A. Yes, I wrote the code.

...

Q. Did anyone else help you?

A. Someone helped me with a little bit of bug fixes. When something didn't work well, Yun Yeo gave almost 1% help, and I made the entire 99%. (Kim Tr. at 35.)

7. I also wrote in my Expert Report that the LP Server software was "a system developed by Terraform Labs employees." (Expert Report ¶ 11(a).) Mr. Kim testified that he was at various times an employee of Gazua Labs ("a company related to the Terra project") (Kim Tr.

at 4), Jigu Electronic Payment Co., Ltd. (which later became the Chai Corporation) (Kim Tr. at 8) and Terraform Labs Korea (Kim Tr. at 16). However, he also testified that he did not know the relationship between Gazua Labs and Terraform PTE Ltd. (Kim Tr. at 6), but that “Gazua Labs engaged in the development of the Terra project in a way” and that he “thought Do Kwon and CEO Daniel Shin were jointly managing [Gazua Labs].” (*Id.*) He also testified that Terraform and Chai had overlapping employees and shared office space.² (Kim Tr. at 31.)

8. Regardless of the purported changes in the nature of Mr. Kim’s affiliation with Terraform Labs, every commit he made to the LP Server source code repository was made using an account with a Terraform Labs email address (“paul@terra.money”), starting with the first commit in June 2019 and continuing to the last commit in December 2021. (Expert Report ¶ 35.) Mr. Kim also testified that he always maintained access to the LP Server (“Q. Does it mean that you always had access to the LP server despite the change in your affiliation? A. Yes.” (Kim Tr. at 53); “Q. In your role as Terraform’s chief engineer, did you interact with the LP server? A. As a member of Terraform Labs Korea, I did monitoring, maintenance and repair of the LP server.” (Kim Tr. at 35)).

III. PAUL KIM’S TESTIMONY SUPPORTS MY OPINIONS THAT THE LP SERVER CONTROLLED THE PRIVATE KEYS ASSOCIATED WITH PURPORTED CHAI USERS AND MERCHANTS AND THAT THE ASSOCIATED TRANSACTIONS ON THE TERRA BLOCKCHAIN WERE CREATED BY THE LP SERVER

9. I provided an opinion in my Expert Report based on my review of the LP Server source code that “the LP Server not only controls the LP Wallet, but it also controls the wallet addresses associated with purported Chai users and merchants.” (Expert Report ¶ 47.) I concluded that “[t]he LP Server controlled the private keys associated with purported Chai transactions, and

² In my Expert Report, I also reviewed an email from Do Kwon from July 15, 2019 in which Kwon represented that “Terra has 100% control” of Chai Corporation. (Expert Report at Appendix A, TFL_SEC_00222092.)

so the associated transactions on the Terra blockchain were created by Terraform Labs' LP Server rather than by 'organic' users of the Terra blockchain." (Expert Report ¶ 11(b).)

10. Defendants' counsel submitted Exhibit I to Mr. Kim's testimony which contained the following Slack conversation in which "Nicolas Andreoulis <nicolas@terra.money>" asked Mr. Kim whether "we have a list of all the wallets associated with Chai (merchants+customers)." (Ex. 2, Kim Exhibit I.) Mr. Kim confirmed the list of wallets was "not publicly available" but he would be able to give it to Mr. Andreoulis.³ (*Id.*)

N Nicolas Andreoulis <nicolas@terra.money> do we have a list of all the wallets associated with Chai (merchants+customers). Is it publicly available?	9/22/2020, 9:18 AM
P Paul Kim <paul@terra.money> No, it is not publicly available, but sure I can give you. Do you need it?	9/22/2020, 9:25 AM

11. In his testimony, Mr. Kim confirmed that the wallets "were in the LP server program database" and that he had access to them. (Kim Tr. at 52.) Mr. Kim further testified, "I had access to the LP server, so I knew that the data of such wallets were stored in the LP server, but I did not exert control over them as in examining them one by one, or trying to manipulate them in any way." (Kim Tr at 52-53.) The Judge presiding over Mr. Kim's testimony asked him to clarify: "Q. That is not what he meant by control. Did you have access, which would allow you to manage the wallets' data? A. Yes." (Kim Tr. at 53.)

12. Mr. Kim also testified repeatedly that the LP Server generated KRT transactions on the Terra blockchain. ("LP server is a project that receives ledger information from Chai and generates KRT transactions on the Terra blockchain." (Kim Tr. at 34); "The purpose of the LP server is to play the role of receiving changes to the ledger information from Chai and uploading KRT transactions on the Terra blockchain." (Kim Tr. at 36); "... All such content makes changes

³ According to Mr. Kim's testimony, he was an employee of Terraform Labs Korea at the time of this conversation. (Kim Tr. at 16.) Both Mr. Kim and Mr. Andreoulis also communicated using accounts associated with Terraform Labs email addresses.

to Chai’s ledger. Such changes are passed on to the LP server, which then makes associated KRT transactions.” (*Id.*)

13. Thus, Mr. Kim’s testimony supports my opinion that “[t]he LP Server controlled the private keys associated with purported Chai transactions, and so the associated transactions on the Terra blockchain were created by Terraform Labs⁴ LP Server rather than by ‘organic’ users of the Terra blockchain.” (Expert Report ¶ 11(b).)

IV. PAUL KIM’S DESCRIPTION OF THE LP SERVER IS CONSISTENT WITH MY OPINION THAT CHAI USER AND MERCHANT TRANSACTIONS WERE NOT PROCESSED AND SETTLED ON THE TERRA BLOCKCHAIN

14. In my Expert Report, I offered an opinion that “the purported Chai transactions on the Terra blockchain represented transfers between wallet addresses controlled by Terraform Labs rather than the processing and settlement of Chai transactions between Chai users and merchants.” (Expert Report ¶ 11(d).) Mr. Kim’s testimony supports that opinion.

15. *First*, as described above, Mr. Kim confirmed that the LP Server controlled the wallet addresses it used to generate the purported Chai transactions on the Terra blockchain.

16. *Second*, Mr. Kim testified that Chai, in fact, maintains its own “ledger” which “is on Chai’s database server.” (Kim Tr. at 36.) Mr. Kim explained:

- Q.** The ledger information is in Chai – doesn’t this mean that the ledger is Chai’s ledger?
- A.** Yes, *withdrawal, top-up, cancellation, things related to settlement with merchants in addition to payments... All such content makes changes to Chai’s ledger.* Such changes are passed on to the LP server, which then makes associated KRT

⁴ While Mr. Kim testified that the LP Server “ran on a hosting server owned by Gazua Labs” and that “the operator of the LP server was Gazua Labs” (Kim Tr. at 34), he appears to be referring to the computer hardware used to run the LP Server software, rather than the LP Server software itself which generated Terra blockchain transactions. In my Expert Report, I described a “LICENSE” file created by Mr. Kim in the LP Server’s source code repository in which he identified the software as “TERRAFORMLABS CONFIDENTIAL” and included the designation “Copyright (c) 2018-present, TerraFormLabs Inc.” (Expert Report ¶ 38.) Mr. Kim also confirmed that the LP server source code used to operate the LP Server was stored in Terraform Labs’ GitHub account. (“Q. The source code in the ‘lp-server’ storage in Terra GitHub, which I mentioned just now, is what is used to operate the LP server, correct? A. Yes, correct.” (Kim Tr. at 65.))

transactions. A transaction function called multisend is used to rearrange the content, and there is a special algorithm. It plays the role of making such content into a blockchain transaction. (Kim Tr. at 36.) (emphasis added)

17. Mr. Kim plainly testified that the LP server received changes made to Chai's ledger from Chai and then created corresponding KRT transactions on the Terra blockchain.⁵ ("All such content makes changes to Chai's ledger. Such changes are passed on to the LP server, which then makes associated KRT transactions." (Kim Tr. at 36); "LP server is a project that receives ledger information from Chai and generates KRT transactions on the Terra blockchain." (Kim Tr. at 34); "The purpose of the LP server is to play the role of receiving changes to the ledger information from Chai and uploading KRT transactions on the Terra blockchain." (Kim Tr. at 36); "Q. You programmed the LP server to bring Chai transactions, the transactions made on Chai, into the Terraform blockchain. A. Yes." (Kim Tr. at 50-51).)

18. *Third*, while Mr. Kim testified that "[s]uch changes are passed on to the LP server" (Kim Tr. at 36), Mr. Kim notably makes no reference in his testimony to any mechanism through which Chai receives or relies on the KRT transactions generated on the Terra blockchain by the LP Server to process and settle transactions between Chai users and merchants.

19. In describing the Chai transaction process, Mr. Kim testified that "the Chai app sends some kind of approval request to the Chai API server over the Internet. Afterwards, the Chai API server receives it on its end, and after verifying everything like, 'the information sent by this person is correct. This person is the user,' it verifies 'and there is or isn't remaining Chai points

⁵ In both my Expert Report and my Rebuttal Report, I referenced a conversation between Mr. Kim and Etienne Napoleone in which Mr. Kim says the LP server "basically replicates chai transactions." (Expert Report ¶ 70; Rebuttal Report ¶ 48.) In his testimony regarding this conversation, Mr. Kim suggested that the LP Server "replicated" Chai transactions onto the Terra blockchain for "stability" and "data accessibility" reasons (Kim Tr. at 70) and so that "people who participate in the blockchain can check and verify its accuracy" (Kim Tr. at 74). This would still be consistent with my opinion that Chai transactions were not processed and settled on the Terra blockchain.

balance,’ after which, steps in the approval process are followed through. Programmatically. Then, at that point, *content in the Chai database is looked up to make sure that it’s all correct, …*” (Kim Tr. at 28-29.) (emphasis added) In other words, Chai relied on its own database for verifying user information and balances, rather than the Terra blockchain.⁶

20. *Fourth*, Mr. Kim’s testimony confirmed that Chai was able to process transactions without the Terra blockchain. In fact, Mr. Kim took issue with the suggestion of Chai *not* being able to process and settle transactions without the Terra blockchain. (“Who would want the Chai service to stop working when the Terra blockchain is temporarily down? The management? And to me, if Terra is down, then simply ‘payment is also down,’ (sic) being an irresponsible engineer…” (Kim Tr. at 44-45).)

21. Indeed, Mr. Kim testified that the LP server “went down” multiple times or the Terra blockchain “temporarily stopped operating,” yet Chai transactions still occurred. (“Q. I previously asked you about the occasions where the LP server went down. Did the LP server go down multiple times? A. Yes, yes, as a person in charge of that matter, I remember that there were around five to six instances.” (Kim Tr. at 59); “Q. Did transactions occur during these time periods? A. Chai transactions? Yes, yes, Chai transactions occurred as long as the LP module⁷ worked. Q. And the data of those transactions were later transferred to Terraform? A. Yes, yes, correct.” (Kim Tr. at 61).)

22. Mr. Kim also testified regarding “instances where Chai did not send over” Chai transactions to the LP Server so the LP Server “wasn’t able to make the Chai KRT transaction.” (Kim Tr. at 46.) After Mr. Kim inquired with Chai as to why Chai was not sending over transaction

⁶ In preparing my Expert Report, I also reviewed a Slack conversation in which Mr. Kim referenced discrepancies between Chai account balances and Terra transaction data. (Expert Report at Appendix A, TFL_SEC_00239164.)

⁷ Mr. Kim described “the LP module” as a “module in Chai’s API server” which essentially contained functionality for sending Chai transactions to the LP Server. (Kim Tr. at 37-38.)

information, Chai “sent over” to the LP Server the Chai transactions that had already been processed during the time the LP server was not receiving any Chai transaction data. (“When that event took place, the content on what happened during the event, for instance, if the event took place over three days, the entire three days’ worth of content was sent over to the LP server.”) (Kim Tr. at 47-48).) In other words, Chai was able to continue to process transactions even though the LP Server “wasn’t able to make the Chai KRT transaction.”

23. Finally, in my Expert Report, I cited a statement from Do Kwon in February 2020 that, “Chai has 12 merchants, all of whom get settled in KRT on the Terra blockchain.” (Expert Report ¶ 27.) Mr. Kim’s testimony supports my opinion that Chai transactions were not, in fact, settled on the Terra blockchain. Specifically, Mr. Kim was asked, “Then, when a transaction occurs on Chai Pay and settlement is made, is the settlement made using the blockchain?” While Mr. Kim testified that he “designed the system in a way that would be possible,” he said, “as far as I know, merchants received payments in Korean Won...” (Kim Tr. at 51.) The Judge presiding over Mr. Kim’s testimony also asked, “Weren’t all merchants settled in Korean Won...” Mr. Kim confirmed, “[Judge interjects with a different question]” (Kim Tr. at 52.)

24. Thus, for the foregoing reasons, Mr. Kim’s testimony further supports my opinion that Chai user and merchant transactions were not processed and settled on the Terra blockchain.⁸

⁸ Near the end of his testimony, Mr. Kim was asked by counsel for Terraform Labs, “To sum up, Chai utilized the blockchain technology to process and settle transactions through partnership with Terraform Labs. Is this understanding correct?” Mr. Kim simply agreed, “Yes, correct.” (Kim Tr. at 80.) However, as described above, Mr. Kim testified that: (1) Chai maintained its own database “ledger” which it relied on for verifying Chai users and transactions; (2) the LP Server’s role was to receive changes to the ledger information from Chai and generate KRT transactions on the Terra blockchain; (3) Chai could (and did) continue processing transactions even when the LP Server or the Terra blockchain “went down” on multiple occasions; and, (4) Chai merchants were settled in Korean Won rather than on the Terra blockchain. These factors support my opinion that Chai user and merchant transactions were *not* processed and settled on the Terra blockchain.

V. PAUL KIM'S TESTIMONY SUPPORTS MY OPINION THAT THE PURPORTED CHAI TRANSACTIONS OCCURRED WITHIN A "CLOSED SYSTEM" OF WALLETS CONTROLLED BY THE LP SERVER

25. In my Expert Report, I provided an opinion that “[t]he purported Chai user transactions occurred within a ‘closed system’ of Terra blockchain wallet addresses” (Expert Report ¶ 11(d)) and that “the purported Chai transactions on the Terra blockchain generated by the LP Server represented a closed system in which the LP Server controlled every purported Chai user wallet, and their on-chain transactions were merely the LP Server moving funds between wallets under its control.” (Expert Report ¶ 66.) Specifically, I stated in my Expert Report that “[a]lmost every address associated with the LP Server transactions only ever transferred crypto assets to another address associated with an LP Server generated transaction,” except for a small number of transfers *from* the LP Wallet to addresses TFL has represented that they control. (Expert Report ¶ 66.) In my Rebuttal Report, I further described how the only addresses that transferred funds *to* the LP Wallet were also associated with Terraform Labs. (Rebuttal Report ¶ 29.)

26. In his testimony, Mr. Kim stated that he received the KRT required to generate LP Server transactions by requesting it from Chang-joon Han. (“I really do not know where it came from. I made a request to Chang-joon Han and received KRT in the wallet, the LP wallet. This is all I know.” (Kim Tr. at 56).) This is consistent with the analysis in my Rebuttal Report describing a Slack conversation in which Do Kwon instructs Paul Kim to “Request KRT funding from CJ,” which was followed shortly thereafter by a transfer of 25 billion KRT from a TFL-controlled wallet to the LP Wallet. (Rebuttal Report ¶ 27.)

27. The only example Mr. Kim provided of KRT associated with the purported Chai transactions that did not come from Terraform-affiliated wallets was “a KRT top-up function” which he testified “allowed users to top up Chai points using the KRT that they had in their wallet.”

(Kim Tr. at 56.) In my Rebuttal Report, I described my analysis of the Terra Topup function which essentially allowed an address associated with the Terra Topup application to withdraw KRT from users' wallets and transfer it to a single wallet address where the funds were held and never left. (Rebuttal Report ¶¶ 63-65.) In other words, the purported Chai user and merchant wallet addresses controlled by the LP Server never received any KRT from the Terra Topup transactions.

28. Mr. Kim posited in his testimony that "since [he] personally heavily used that function, and since the Terra community in Korea greatly welcomed this function, from [his] standpoint, [he] thought 'it is heavily used. This is very rewarding.'" (Kim Tr. at 29.) To the contrary, my analysis of the Terra blockchain data associated with the Terra Topup transactions showed it "only operated for approximately one year and represented a *de minimis* level of activity" compared to the volume of transactions generated by the LP Server over that same period.⁹ (Rebuttal Report ¶ 64.) And, again, *none* of the Terra blockchain transactions associated with the Terra Topup function transferred KRT to any of the purported Chai user or merchant wallets controlled by the LP Server. (Rebuttal Report ¶ 65.)

29. Thus, nothing in Mr. Kim's testimony causes me to revise my opinion that the purported Chai transactions occurred within a "closed system" of wallets controlled by the LP Server rather than the processing and settlement of Chai transactions between Chai users and merchants.

⁹ Mr. Kim also testified that he thought the Terra Topup program started around May 2020, but was not sure when it ended. (Kim Tr. at 58.) My analysis of the Terra blockchain showed that the Terra Topup program did not start until in or around March 2021 and the last transaction occurred in March 2022. (Rebuttal Report ¶ 64.)

VI. PAUL KIM'S TESTIMONY REGARDING CHAI MERCHANT TRANSACTIONS ON THE TERRA BLOCKCHAIN PRIOR TO DECEMBER 2019 IS VAGUE AND UNSUPPORTED BY THE EVIDENCE

30. In my Expert Report, I analyzed Terra blockchain data to identify transactions involving purported Chai merchant wallet addresses. (Expert Report ¶¶ 67-69.) I determined that there was no Terra “blockchain activity associated with the wallet addresses identified as Chai merchants until December 14, 2019, which coincided with the genesis of Terra’s columbus-3 blockchain as well as changes to the LP Server repository made by Paul Kim.” (Expert Report ¶ 69.)

31. In his testimony, Mr. Kim was asked “if a certain claim service (*sic*) with regard to the merchants finally came to be made in December 2019, isn’t it correct that the functions related to the merchants did not exist on the Chai app or things like that before then?” Mr. Kim asserted, “No, that is not correct. They existed.” (Kim Tr. at 89.) While it is not clear from his testimony, I will address the possibility that Mr. Kim was implying that merchant transactions did, in fact, occur on the Terra blockchain prior to December 2019.

32. *First*, the question regarding “functions related to merchants” was raised in the context of Exhibit A to his testimony. (Ex. 3, Translated Kim Exhibit A; Kim Tr. at 87-90.) The exhibit is an email related to changes made to a GitHub repository called “api-server” which was maintained by Chai. (Kim Tr. at 64.) Indeed, Mr. Kim testified regarding that same exhibit, “Yes, correct. But this one is not about the LP server storage, but the API server” (Kim Tr. at 65-66), which, again, was maintained by Chai. As Mr. Kim repeatedly testified, it was the LP Server—not “the API server”—that “receives ledger information from Chai and generates KRT transactions on the Terra blockchain.” (Kim Tr. at 34.)

33. *Second*, the changes to Chai’s API server discussed in Exhibit A to Mr. Kim’s testimony were made in or around December 12, 2019, which is shortly before my analysis identified Chai merchant transactions appearing on the Terra blockchain, as well as commits made by Mr. Kim to the LP Server source code. (Expert Report ¶ 69.) My analysis of Terra blockchain data was consistent with my review of the LP Server source code prior to December 2019 in which I found that the source code did not reference merchant identifiers when generating Terra blockchain transactions. (Expert Report ¶ 43.) Nothing in Exhibit A to Mr. Kim’s testimony causes me to revise that opinion.

34. *Finally*, Mr. Kim was also asked about the Tempura blockchain, which I opined in my Expert Report is “a reference to a non-public blockchain separate from the Terra blockchain.” (Expert Report ¶ 40.) Mr. Kim testified that, “Tempura was never actually made in reality. It was just there as a code name. Tempura was never once used.” (Kim Tr. at 88.)

35. Mr. Kim’s testimony regarding Tempura is at odds with the evidence in this matter. In preparing my Expert Report, I reviewed Slack communications from June 2019 in which Mr. Kim, Yun Yeo, and Do Kwon discussed creating Tempura wallet addresses and transactions. Those transactions were denominated in “don” rather than KRT. (Expert Report at Appendix A, TFL_SEC_00237653) I also reviewed a separate Slack communication regarding Chai in which Do Kwon stated, “[W]e are not using any terra blockchain technology. [W]e are using a private blockchain called Tempura.” In the same chat, Do Kwon also said, “already lots of people figured out their own wallet addresses” and “some have (this is harder, so not sure how) discovered evidence of the tempura blockchain too.” (Expert Report at Appendix A, TFL_SEC_00240269.)

36. The commit history for the LP Server source code indicates that functionality related to the Tempura blockchain—which created transactions denominated in “don”—was not removed from the LP Server until December 2019. (Expert Report ¶ 44-45.)

37. However, even if Mr. Kim’s assertion that “[t]empura was never once used” were true, it would not change the fact that publicly available blockchain data indicates that no KRT transactions involving any of the purported Chai merchant addresses occurred on the Terra blockchain prior to December 2019.

VII. RESERVATION OF RIGHTS

38. I reserve all rights to modify or supplement this declaration if I become aware of any errors or misstatements, or if I become aware of other data or other evidence relevant to my analysis and opinion. I also reserve all rights to respond to any statements made by Defendants’ witnesses or expert witnesses to which a response is appropriate.

* * *

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 27, 2024.



Dr. Matthew J. Edman
New York, NY

APPENDIX A: MATERIALS CONSIDERED

1. *Expert Report of Dr. Matthew J. Edman*, September 7, 2023, Exhibits and Materials Listed in Appendix A, and Code and Data Production.
2. *Corrected Expert Report of Dr. Matthew J. Edman*, September 19, 2023, Exhibits and Materials Listed in Appendix A, and Code and Data Production.
3. *Rebuttal Report of Dr. Matthew J. Edman*, October 13, 2023, Exhibits and Materials Listed in Appendix A, and Code and Data Production.
4. Certified Korean to English Translation of the Transcript of the Testimony of Paul Kim in Seoul Eastern District Court, January 15, 2024, and All Exhibits Presented by Defendants.
5. Certified Korean to English Translation of Exhibit A to the Testimony of Paul Kim.